SECTION 7. PLANNING THE 2000 FSIS IMPORT RESIDUE PLAN: PESTICIDES

PHASE I - GENERATING AND RANKING LIST OF CANDIDATE COMPOUNDS

The Food Safety and Inspection Service (FSIS) asked the Environmental Protection Agency (EPA) to generate a list of candidate compounds for the 2000 Import Residue Plan. EPA's list of compounds of concern for the Import Residue Plan was identical to that for the Domestic Residue Plan (see Section 6, Table 6.1). Furthermore, in ranking pesticides for inclusion in the Import Residue Plan, FSIS chose to employ to the ranking scores generated for the Domestic Residue Plan (see Section 6), because FSIS does not have sufficient historical data on pesticides in imported products to predict their violation rates.

PHASE II - SELECTING PESTICIDES FOR INCLUSION IN THE 2000 IMPORT RESIDUE PLAN

The list of high priority compounds chosen for the Import Residue Plan by the Surveillance Advisory Team (SAT) was the same as that for the domestic plan. Once the high-priority compounds and compound classes had been identified, it was necessary for the Food Safety and Inspection Service (FSIS) to apply non public health considerations to determine the compounds that would be sampled. The principal non public health consideration was the availability of laboratory resources, especially the availability of appropriate analytical methods within the FSIS laboratories. Based on these constraints, only the chlorinated hydrocarbon/chlorinated organophosphate (CHC/COP)[1] compound class can currently be included in the NRP. The compounds that can be identified by this multiresidue method are listed in Section 6, Phase II, p.94.

PHASE III- IDENTIFYING THE COMPOUND/PRODUCT CLASS PAIRS

As with the domestic program, the FSIS decided to sample for CHC's and COP's in all product classes. FSIS also continues sampling for these compounds in all production classes as a means of monitoring for the occurrence of accidental contamination incidents.

PHASE IV - ALLOCATION OF SAMPLING RESOURCES

ALLOCATION OF SAMPLING RESOURCES AMONG DIFFERENT PRODUCTION CLASSES

The samples for residue analysis for imported egg products are selected in a different manner than the other product classes.

[1]Phenylbutazone is also detected by this method.

EGG PRODUCTS

As stated in Section 2, for egg products, the first ten shipments from individual foreign establishments are subjected to 100 % reinspection, to establish a history of compliance with the U.S. requirements for each egg product category. This rate is reduced to a random selection of one reinspection out of eight product lots from each foreign establishment, which will continue as long as the product is in compliance

ANIMAL PRODUCT CLASSES

Table 5.6**,** *Estimated Annual Amount of Product Imported,* lists the estimated amounts of all product classes imported into the U.S. and the percentage of each of the product classes. The percentage of each product class imported annually is calculated using the following formula:

$$\% \text{ Product Class Imported } (P_C) = \frac{\text{Amount Product Class Imported}}{\text{Total Product Imported}} \times 100 \qquad (7.1)$$

The relative sampling priority is obtained by multiplying the percent product class imported (P_C) by the pesticide scores obtained in Phase I, using the following equation:

$$\text{Relative Sampling Priority} = (P_C) \times \text{Pesticide Score} \qquad (7.2)$$

Based on the scores, four different sampling options were chosen: very high regulatory concern (460 analyses/year); high regulatory concern (300 analyses/year); moderate regulatory concern (230 samples/year); low regulatory concern (90 samples/year). This is indicated in Table 7.1, *Number of Pesticide Samples/Product Class,* in the column labeled "Number of Samples."

As stated in Section 5, if a product class represents less than one percent (by weight) of total combined U.S. imports of meat, poultry and egg products, then the total number of samples analyzed for any compound or compound class is eight times the number of countries from which that product is imported. For example, processed turkey is imported from only three countries. The amount imported is 0.10 % relative to total U.S. imports. Therefore, 24 samples of processed turkey would be taken for each analysis, eight from each country.

The adjusted number of samples is listed in Table 7.1, *Number of Pesticide Samples/Product Class*, in the column labeled "Adjusted Number of Samples." The final number of samples for a compound/product class is obtained after the allocation of samples among different countries is completed. The final number of samples is listed in Table 7.1 in the column labeled "Final Number of Samples." The numbers in columns labeled "Adjusted Number of Samples" and "Final Number of Samples" may vary slightly because of the rounding upwards or downwards of the samples.

Allocation of Samples among Different Countries

The total number of samples was chosen for each compound/product class pair, was subdivided among the different countries. The number of samples for each country was based on the relative amount of total product class imported: less than one percent and greater than one percent.

Allocation of Samples in Product Classes Whose Total Volume Imported is Less Than 1%

As stated above, if the amount of an import product class was less than 1%, eight samples per compound/compound class were taken from each country. The relative amounts of fresh chicken, fresh goat, beef/pork processed, turkey fresh and processed, other fowl fresh and processed, varied combination processed, lamb/mutton processed, and veal processed was less than 1%. The numbers of samples per country per product class for each compound/compound class are listed in Tables 7.2 - 7.11.

Allocation if Samples in Product Classes Whose Total Volume Imported is Greater Than 1%

For major product classes, the number of samples was allocated to each country depending upon the relative amount of product imported from that country. Table 5.7, *Estimated Annual Volume of Import Product/Country*, lists the amount of product imported from each country. The percent of a product class imported from a country was calculated as follows and is in Table 5.8, *Relative Annual Amount of Import Product /Country.*

$$\text{Percent Product Class Imported per Country } (P_{C/C}) = \frac{\text{Amount of Product Class from Country}}{\text{Total Amount of Product Class}} \times 100 \quad (7.3)$$

Based upon the relative amount of product class imported per country, the number of samples that should be taken at the port of entry was calculated using the following formula:

$$\text{Unadjusted Number of Samples per Country } (U_{C/S}) = \text{Total Number of Samples} \times \frac{(P_{C/C})}{100} \quad (7.4)$$

This is indicated in the column labeled "Unadjusted Number of Samples ($U_{C/S}$)," in Tables 7.12 to 7.18.

After the determination of the number of samples from each country, each country with less than eight samples was assigned a minimum of eight samples. This is indicated in the column labeled "Adjustment # 1" in Tables 7.11 to 7.18. The results of this adjustment are in the column labeled "Initial Adj#." After this adjustment, the total number of samples for a compound/product class resulted in more than the total number of samples allocated to that compound/product class pair. A second adjustment then had to be made so that the total number of samples would be within an allocated number. This adjustment was made only to those countries from which greater than eight samples were to be taken. This was done using the following equation:

$$\text{Number of Samples after Adjustment \# 2} = (U_{C/S}) - \frac{[N \times (P_{C/C})]}{(P_{T/C})} \quad (7.5)$$

where,
$N = (N_1) - (N_T)$
$N_1 =$ Total Number of Samples after Adjustment #1
$N_T =$ Total Number of Samples Allocated
$P_{T/C}$ = Total Percent of Product Class from the Countries That Had Greater Than Eight Samples
$P_{C/C}$ = Percent Product Class Imported per Country
$U_{C/S}$ = Unadjusted Number of Samples

The final numbers of product sampled are indicated in Tables 7.11 - 7.18, in the column labeled "Final Adj.#."

Table 7.1
Number of Pesticide Samples/Product Class
2000 Import Residue Plan

NO. COUNTRIES	PRODUCT	PESTICIDE	PESTICIDE SCORE	PERCENT PRODUCT	RELATIVE SAMPLING PRIORITY	NUMBER OF SAMPLES	ADJUSTED NUMBER OF SAMPLES	FINAL NUMBER OF SAMPLES
11	Beef, Fresh	CHC's/COP's	16	61.00	975.98	460	460	459
8	Pork, Fresh	CHC's/COP's	16	18.99	303.77	300	460	460
12	Beef, Processed	CHC's/COP's	16	6.35	101.65	300	300	300
16	Pork, processed	CHC's/COP's	16	6.33	101.25	230	300	298
6	Mutton/Lamb, Fresh	CHC's/COP's	16	3.42	54.66	90	230	230
3	Veal, Fresh	CHC's/COP's	16	1.40	22.45	90	90	90
4	Chicken, Processed	CHC's/COP's	16	1.25	19.95	90	90	90
1	Chicken, Fresh	CHC's/COP's	16	0.44	6.97	90	8	8
3	Goat, Fresh	CHC's/COP's	16	0.27	4.40	90	24	24
8	Beef/Pork, Processed	CHC's/COP's	16	0.13	2.09	90	64	64
3	Turkey, Processed	CHC's/COP's	16	0.10	1.60	90	24	24
3	Other fowl, Processed	CHC's/COP's	16	0.07	1.09	90	24	24
3	Varied Combination, Processed	CHC's/COP's	16	0.05	0.85	90	24	24
4	Mutton/Lamb, Processed	CHC's/COP's	16	0.02	0.36	90	32	32
2	Other Fowl, Fresh	CHC's/COP's	16	0.02	0.27	90	16	16
1	Turkey, Fresh	CHC's/COP's	16	0.01	0.17	90	8	8
1	Veal, Processed	CHC's/COP's	16	0.002	0.03	90	8	8
Total						2460	2162	2159

Table 7.2
Number of Samples/Product Class-Chicken, Fresh
2000 Import Residue Plan

CHICKEN, FRESH/CHC's/COP's	PERCENT PRODUCT	FINAL NUMBER OF SAMPLES
Canada	100.00	8
Total	100.00	8

Table 7.3
Number of Samples/Product Class-Turkey, Fresh
2000 Import Residue Plan

TURKEY, FRESH/CHC's/COP's	PERCENT PRODUCT	FINAL NUMBER OF SAMPLES
Canada	100.00	8
Total	100.00	8

Table 7.4
Number of Samples/Product Class-Turkey, Processed
2000 Import Residue Plan

TURKEY, PROCESSED/CHC's/COP's	PERCENT PRODUCT	FINAL NUMBER OF SAMPLES
Canada	68.56	8
Hong Kong	20.36	8
Israel	11.08	8
Total	100.00	24

Table 7.5
Number of Samples/Product Class-Other Fowl, Fresh
2000 Import Residue Plan

OTHER FOWL, FRESH/CHC's/COP's	PERCENT PRODUCT	FINAL NUMBER OF SAMPLES
Canada	77.99	8
France	22.01	8
Total	100	16

Table 7.6
Number of Samples/Product Class-Other Fowl, Processed
2000 Import Residue Plan

OTHER, FOWL, PROCESSED/CHC's/COP's	PERCENT PRODUCT	FINAL NUMBER OF SAMPLES
Canada	97.14	8
France	2.86	8
Israel	0.01	8
Total	100.00	24

Table 7.7
Number of Samples/Product Class-Veal, Processed
2000 Import Residue Plan

VEAL, PROCESSED/CHC's/COP's	PERCENT PRODUCT	FINAL NUMBER OF SAMPLES
Canada	100.00	8
Total		8

Table 7.8
Number of Samples/Product Class-Beef/Pork, Processed
2000 Import Residue Plan

BEEF/PORK, PROCESSED/CHC's/COP's	PERCENT PRODUCT	FINAL NUMBER OF SAMPLES
Australia	0.18	8
Austria	0.03	8
Canada	95.26	8
Costa Rica	1.76	8
Croatia	0.16	8
Denmark	1.85	8
Netherlands	0.77	8
New Zealand	0.001	8
Total		64

Table 7.9
Number of Samples/Product Class-Lamb/Mutton, Processed
2000 Import Residue Plan

LAMB/MUTTON, PROCESSED/CHC's/COP's	PERCENT PRODUCT	FINAL NUMBER OF SAMPLES
Australia	41.58	8
Canada	39.13	8
New Zealand	13.81	8
Uruguay	5.49	8
Total		32

Table 7.10
Number of Samples /Product Class-Goat, Fresh
2000 Import Residue Plan

GOAT, FRESH/CHC's/COP's	PERCENT PRODUCT	FINAL NUMBER OF SAMPLES
Australia	88.29	8
Canada	0.01	8
New Zealand	11.70	8
Total		24

Table 7.11
Number of Samples /Product Class-Varied Combination, Processed
2000 Import Residue Plan

VARIED COMBINATION, PROCESSED /CHC'S/COP'S	PERCENT PRODUCT	FINAL NUMBER OF SAMPLES
Australia	2.07	8
Canada	93.29	8
France	1.98	8
Total		24

Table 7.12
Number of Samples/Product Class-Beef, Fresh
2000 Import Residue Plan

BEEF, FRESH/ CHC's/COP's	PERCENT PRODUCT ($P_{C/C}$)	UNADJUSTED NUMBER OF SAMPLES (U) = 460*(($P_{C/C}$)/100)	ADJUSTMENT #1 (8 MINIMUM/ COUNTRY)	INITIAL ADJ.#	ADJUST. # 2	FINAL ADJ.#
Argentina	1.94	9		9	8	8
Australia	34.25	158		158	144	144
Canada	39.90	184		184	168	168
Costa Rica	1.17	5	8	8		8
Honduras	0.05	0	8	8		8
Ireland	0.00	0	8	8		8
Japan	0.00	0	8	8		8
Mexico	0.31	1	8	8		8
New Zealand	19.58	90		90	82	82
Nicaragua	0.70	3	8	8		8
Uruguay	2.09	10		10	9	9
Total		460		499		459

Table 7.13
Number of Samples /Product Class-Lamb/Mutton, Fresh
2000 Import Residue Plan

LAMB/ MUTTON, FRESH/ CHC's/COP's	PERCENT PRODUCT ($P_{C/C}$)	UNADJUSTED NUMBER OF SAMPLES (U)= 230*(% PRODUCT/100)	ADJUSTMENT #1 (8 MINIMUM/ COUNTRY)	INITIAL ADJ.#	ADJUST. # 2	FINAL ADJ.#
Australia	63.58	146		146	127	127
Canada	0.54	1	8	8		8
Iceland	0.06	0	8	8		8
Mexico	0.00	0	8	8		8
New Zealand	35.71	82		82	71	71
Uruguay	0.11	0	8	8		8
Total		230		260		230

Table 7.14
Number of Samples/Product Class-Pork, Processed
2000 Import Residue Plan

PORK, PROCESSED/ CHC's/COP's	PERCENT PRODUCT ($P_{C/C}$)	UNADJUSTED NUMBER OF SAMPLES (U) = 300*(($P_{C/C}$)/100)	ADJUSTMENT #1 (8 MINIMUM/ COUNTRY)	INITIAL ADJ.#	ADJUST..# 2	FINAL ADJ.#
Austria	0.00	0	8	8		8
Belgium	4.35	13		13	10	10
Canada	49.50	148		148	111	111
Costa Rica	0.00	0	8	8		8
Croatia	0.85	3	8	8		8
Denmark	26.90	81		81	61	61
France	0.39	1	8	8		8
Germany	0.14	0	8	8		8
Hungary	3.31	10	8	10	8	8
Ireland	0.42	1	8	8		8
Italy	1.71	5	8	8		8
Mexico	0.18	1	8	8		8
Netherlands	5.52	17		17	13	13
Poland	6.60	20		20	15	15
Spain	0.14	0	8	8		8
Switzerland	0.003	0	8	8		8
Total		300		369		298

Table 7.15
Number of Samples /Product Class-Pork, Fresh
2000 Import Residue Plan

PORK, FRESH/ CHC's/COP's	PERCENT PRODUCT ($P_{C/C}$)	UNADJUSTED NUMBER OF SAMPLES (U) = 460*(($P_{C/C}$)/100)	ADJUSTMENT #1 (8 MINIMUM/ COUNTRY)	INITIAL ADJ.#	ADJUST.# 2	FINAL ADJ.#
Australia	0.02	0	8	8		8
Canada	85.13	392		392	361	361
Denmark	12.26	56		56	51	51
Finland	0.11	1	8	8		8
Ireland	1.02	5	8	8		8
Mexico	0.04	0	8	8		8
Sweden	0.14	1	8	8		8
UK	1.28	6	8	8		8
Total		460		496		460

Table 7.16
Number of Samples/Product Class-Chicken, Processed
2000 Import Residue Plan

CHICKEN, PROCESSED/ CHC's/COP's	PERCENT PRODUCT ($P_{C/C}$)	UNADJUSTED NUMBER OF SAMPLES (U)= 90*(% PRODUCT/100)	ADJUSTMENT #1 (8 MINIMUM/ COUNTRY)	INITIAL ADJ.#	ADJUST.# 2	FINAL ADJ.#
Canada	98.72	89		89	66	66
France	0.001	0	8	8		8
Hong Kong	0.24	0	8	8		8
Israel	1.04	1	8	8		8
		90	24	113		90

Table 7.17
Number of Samples /Product Class-Veal, Fresh
2000 Import Residue Plan

VEAL, FRESH/ CHC's/COP's	PERCENT PRODUCT ($P_{C/C}$)	UNADJUSTED NUMBER OF SAMPLES (U)= 90*(% PRODUCT/100)	ADJUSTMENT #1 (8 MINIMUM/ COUNTRY)	INITIAL ADJ.#	ADJUST.# 2	FINAL ADJ.#
Australia	11.12	10	10	10	10	10
Canada	38.38	35	35	35	35	35
New Zealand	50.50	45	45	45	45	45
Total		90		90		90

Table 7.18
Number of Samples /Product Class-Beef, Processed
2000 Import Residue Plan

BEEF, PROCESSED CHC's/COP's	PERCENT PRODUCT ($P_{C/C}$)	UNADJUSTED NUMBER OF SAMPLES (U) = 300*(($P_{C/C}$)/100)	ADJUSTMENT #1 (8 MINIMUM/ COUNTRY)	INITIAL ADJ.#	ADJUST. # 2	FINAL ADJ.#
Argentina	28.64	86		86	73	70
Australia	1.00	3	8	8		8
Brazil	43.75	131		131	110	108
Canada	20.98	63		63	53	51
Costa Rica	0.05	0	8	8		8
Croatia	0.43	1	8	8		8
Germany	0.00	0	8	8		8
Italy	0.07	0	8	8		8
Mexico	2.12	6	8	8		8
New Zealand	0.77	2	8	8		8
Switzerland	0.02	0	8	8		8
Uruguay	2.17	7	8	8		8
Total		300		344		300